

Michael A. McDonald

CONTACT INFORMATION	MIT Department of Physics 77 Massachusetts Avenue Cambridge, MA 02139-4307	<i>Office:</i> (617) 324-1075 <i>E-mail:</i> mcdonald@mit.edu <i>Web:</i> http://space.mit.edu/~mcdonald/
EDUCATION	Ph.D., Astronomy , University of Maryland <i>Advisor: Prof. Sylvain Veilleux</i> M.S., Astronomy , Queen's University (Canada) <i>Advisor: Prof. Stéphane Courteau</i> BScH, Astrophysics , Queen's University (Canada) BSc, Mathematics and Statistics , Queen's Univ. (Canada)	June 2011 August 2007 May 2005 May 2004
EMPLOYMENT	Associate Professor , MIT Assistant Professor , MIT Hubble Postdoctoral Fellow , MIT Postdoctoral Associate , MIT	2020 – Present 2015 – Present 2012 – 2015 2011 – 2012
EXTERNAL POSITIONS HELD	<i>Major Role</i> STAR-X Mission, Institutional PI (Proposed Mission to NASA) SPT-eRosita Collaboration Board Member South Pole Telescope Collaboration Senior Member <i>Minor Role</i> Arcus Science Working Group (Proposed Mission to NASA) Arcus Science Working Group (Proposed Mission to NASA) STROBE-X Science Working Group (Proposed Mission to NASA) Lynx Science Working Group (Proposed Mission to NASA) STAR-X Science Working Group (Proposed Mission to NASA) Athena Science Working Group (Proposed Mission to ESA) Large Synoptic Survey Telescope Clusters Working Group Dark Energy Survey Clusters Working Group	2021 – Present 2019 – Present 2012 – Present 2021 – Present 2018 – 2019 2016 – Present 2016 – Present 2016 – 2018 2015 – Present 2015 – Present 2013 – Present
AWARDS & HONORS	NSF Faculty Early Career (CAREER) Development Grant NASA Hubble Fellowship NASA Einstein Fellowship (declined) Univ. of Maryland CMNS Outstanding Graduate Student Award National Research Council of Canada Plaskett Fellowship (declined) Australian Research Council Super Science Fellowship (declined) John C. Wang Academic Excellence Award (UMD)	2018 2012 2012 2011 2011 2011 2009
UNDERGRAD STUDENTS SUPERVISED	Tohfa, Hurum (MIT Summer Research Program) Beleznay, Maya (MIT UROP) Hansen, Kylie (MIT UROP) Ducrepin, Stephan (MIT UROP) Surrao, Kristen (MIT UROP) Mastrandrea, Radha (MIT UROP) Sharma, Ayush (MIT UROP) Arnott, Robert (MIT UROP) Jodeiry, Kiana (MIT UROP) Pineiro, David (MIT UROP) Lin, Henry (Research Science Institute @ MIT)	Summer 2021 Fall 2020 – Present Summer 2020 – Present Spring 2020 Fall 2018 – Spring 2020 Fall 2016 Spring 2016 Fall 2015 Spring 2015 Fall 2014 Summer 2012

PH.D. STUDENTS SUPERVISED	White, Laurel	2021 – Present
	“The Search for Galaxy Clusters at $2 < z < 3$ ”	
	Calzadilla, Michael	2016 – Present
	“The Redshift Evolution of Radio-Mode AGN Feedback”	
	Somboonpanyakul, Taweewat	2015 – 2021
	“The Role of Quasar Feedback in Galaxy Clusters”	
	Masterson, Megan (Research rotation; 1 year)	2020 – 2021
	“Anecdotal Evidence for Long-Lived AGN Feedback”	
	Wagner, Cory (co-supervised w/ S. Courteau @ Queens Univ.)	2014 – 2018
	“The Quenching of Cluster Galaxies”	
POSTDOCTORAL RESEARCHERS SUPERVISED	Ruppin, Florian	2018 – 2021
	Bayliss, Matthew	2016 – 2019
	Noble, Allison	2016 – 2019
TEACHING EXPERIENCE	8.902, “Graduate Astrophysics II”	Fall 2021
	8.02, “Physics II: Electricity and Magnetism”	Spring 2021
	8.02, “Physics II: Electricity and Magnetism”	Spring 2020
	8.902, “Graduate Astrophysics II”	Fall 2019
	8.01, “Physics I: Classical Mechanics”	Fall 2017
	8.02, “Physics II: Electricity and Magnetism”	Spring 2017
	8.01, “Physics I: Classical Mechanics”	Fall 2016
	8.02, “Physics II: Electricity and Magnetism”	Spring 2016
	8.012, “Physics I: Classical Mechanics”	Fall 2015
PUBLICATIONS (PHD STUDENTS MARKED WITH *)	133. *Somboonpanyakul T., McDonald M. , et al.; “The Clusters Hiding in Plain Sight (CHiPS) Survey: Complete Sample of Extreme BCG Clusters”, 2021, ApJ, 910,60	
	132. Vantghem A. N., et al.; “A Massive, Clumpy Molecular Gas Distribution and Displaced AGN in Zw 3146”, 2021, ApJ, 910,53	
	131. Ghirardini V., et al.; “Evolution of the Thermodynamic Properties of Clusters of Galaxies out to Redshift of 1.8”, 2021, ApJ, 910,14	
	130. McDonald M. , et al.; “Observational Evidence for Enhanced Black Hole Accretion in Giant Elliptical Galaxies”, 2021, ApJ, 908,85	
	129. Timmerman R., van Weeren R. J., McDonald M. , et al.; “Very Large Array observations of the mini-halo and AGN feedback in the Phoenix cluster”, 2021, A&A, 646,A38	
	128. *Somboonpanyakul T., McDonald M. , et al.; “The Clusters Hiding in Plain Sight (CHiPS) Survey: CHIPS1911+4455, a Rapidly Cooling Core in a Merging Cluster”, 2021, ApJL, 907,L12	
	127. Mantz A. B., et al.; “Deep XMM-Newton observations of the most distant SPT-SZ galaxy cluster”, 2020, MNRAS, 496,1554	
	126. Hlavacek-Larrondo J., et al.; “Evidence of Runaway Gas Cooling in the Absence of Supermassive Black Hole Feedback at the Epoch of Cluster Formation”, 2020, ApJL, 898,L50	

125. Martz C. G., et al.; “Thermally Unstable Cooling Stimulated by Uplift: The Spoiler Clusters”, 2020, ApJ, 897,57
124. Zenteno A., et al.; “A joint SZ-X-ray-optical analysis of the dynamical state of 288 massive galaxy clusters”, 2020, MNRAS, 495,705
123. Qiu Y., Bogdanovi? T., Li Y., **McDonald M.**, et al.; “The formation of dusty cold gas filaments from galaxy cluster simulations”, 2020, Nature Astronomy, 4,900
122. Gupta N., et al.; “Constraining radio mode feedback in galaxy clusters with the cluster radio AGNs properties to $z \sim 1$ ”, 2020, MNRAS, 494,1705
121. Mahler G., et al.; “Strong Lensing Model of SPT-CL J0356-5337, a Major Merger Candidate at Redshift 1.0359”, 2020, ApJ, 894,150
120. Ruppin F., **McDonald M.**, et al.; “Unveiling the Merger Dynamics of the Most Massive MaDCoWS Cluster at $z = 1.2$ from a Multiwavelength Mapping of Its Intracluster Medium Properties”, 2020, ApJ, 893,74
119. Bleem L. E., et al.; “The SPTpol Extended Cluster Survey”, 2020, ApJS, 247,25
118. Huang N., et al.; “Galaxy Clusters Selected via the Sunyaev-Zel’dovich Effect in the SPTpol 100-square-degree Survey”, 2020, AJ, 159,110
117. Bayliss M. B., **McDonald M.**, et al.; “An X-ray detection of star formation in a highly magnified giant arc”, 2020, Nature Astronomy, 4,159
116. *Calzadilla M. S., **McDonald M.**, et al.; “Discovery of a Powerful $> 10^{61}$ erg AGN Outburst in the Distant Galaxy Cluster SPT-CLJ0528-5300”, 2019,ApJL, 887,L17
115. **McDonald M.**, et al.; “Anatomy of a Cooling Flow: The Feedback Response to Pure Cooling in the Core of the Phoenix Cluster”, 2019, ApJ, 885,63
114. Medezinski E., **McDonald M.**, et al.; “On the Assembly Bias of Cool Core Clusters Traced by H α Nebulae”, 2019, ApJ, 882,166
113. Decker B., et al.; “The Massive and Distant Clusters of WISE Survey. VI. Stellar Mass Fractions of a Sample of High-redshift Infrared-selected Clusters”, 2019, ApJ, 878,72
112. Bocquet S., et al.; “Cluster Cosmology Constraints from the 2500 deg² SPT-SZ Survey: Inclusion of Weak Gravitational Lensing Data from Magellan and the Hubble Space Telescope”, 2019, ApJ, 878,55
111. *Calzadilla M. S., Russell H. R., **McDonald M.**, et al.; “Revealing a Highly Dynamic Cluster Core in Abell 1664 with Chandra”, 2019, ApJ, 875,65
110. Dietrich J. P., et al.; “Sunyaev-Zel’dovich effect and X-ray scaling relations from weak lensing mass calibration of 32 South Pole Telescope selected galaxy clusters”, 2019, MNRAS, 483,2871
109. Gonzalez A. H., et al.; “The Massive and Distant Clusters of WISE Survey. I. Survey Overview and a Catalog of >2000 Galaxy Clusters at $z \sim 1$ ”, 2019, ApJS, 240,33
108. Qiu Y., Bogdanovi? T., Li Y., **McDonald M.**; “Using H α Filaments to Probe Active Galactic Nuclei Feedback in Galaxy Clusters”, 2019, ApJL, 872,L11

107. Strazzullo V., et al.; “Galaxy populations in the most distant SPT-SZ clusters. I. Environmental quenching in massive clusters at $1.4 < z < 1.7$ ”, 2019, A&A, 622,A117
106. Capasso R., et al.; “Galaxy kinematics and mass calibration in massive SZE-selected galaxy clusters to $z \sim 1.3$ ”, 2019, MNRAS, 482,1043
105. Bulbul E., et al.; “X-Ray Properties of SPT-selected Galaxy Clusters at $0.2 < z < 1.5$ Observed with XMM-Newton”, 2019, ApJ, 871,50
104. **McDonald M.**, et al.; “A Detailed Study of the Most Relaxed SPT-selected Galaxy Clusters: Properties of the Cool Core and Central Galaxy”, 2019, ApJ, 870,85
103. Vantyghem A. N., et al.; “An Enormous Molecular Gas Flow in the RX J0821+0752 Galaxy Cluster”, 2019, ApJ, 870,57
102. Noble A. G., Muzzin A., **McDonald M.**, et al.; “Resolving CO (2-1) in $z \sim 1.6$ Gas-rich Cluster Galaxies with ALMA: Rotating Molecular Gas Disks with Possible Signatures of Gas Stripping”, 2019, ApJ, 870,56
101. Khullar G., et al.; “Spectroscopic Confirmation of Five Galaxy Clusters at $z > 1.25$ in the 2500 deg² SPT-SZ Survey”, 2019, ApJ, 870,7
100. Barnes, David J., et al.; “A census of cool-core galaxy clusters in IllustrisTNG”, 2018, MNRAS, 481, 1809
99. Pinto, C., et al.; “AGN feedback in the Phoenix cluster”, 2018, MNRAS, 480, 4113
98. *Wagner, C., **McDonald, M.**, & Courteau, S.; “Stripping of the Hot Gas Halos in Member Galaxies of Abell 1795”, 2018, ApJ, 867, 14W
97. Gendron-Marsolais, M., et al.; “Revealing the velocity structure of the filamentary nebula in NGC 1275 in its entirety”, 2018, MNRAS, 479, 28
96. Tremblay, G. R., et al.; “A Galaxy-scale Fountain of Cold Molecular Gas Pumped by a Black Hole”, 2018, ApJ, 865, 13T
95. Chiu, I., Mohr, J. J., **McDonald, M.**, et al.; “Baryon content in a sample of 91 galaxy clusters selected by the South Pole Telescope at $0.2 < z < 1.25$ ”, 2018, MNRAS, 478, 3072
94. Vantyghem, A. N., et al.; “Molecular Gas Filaments and Star-forming Knots Beneath an X-Ray Cavity in RXC J1504?0248”, 2018, ApJ, 863, 193V
93. *Somboonpanyakul, T.; **McDonald, M.**, et al.; “The Clusters Hiding in Plain Sight (CHiPS) Survey: A First Discovery of a Massive Nearby Cluster around PKS 1353-341”, 2018, ApJ, 863, 122S
92. Ray, Paul S, et al.; “STROBE-X: a probe-class mission for x-ray spectroscopy and timing on timescales from microseconds to years”, 2018, SPIE, 10699, 19R
91. **McDonald, M.**, et al.; “Revisiting the Cooling Flow Problem in Galaxies, Groups, and Clusters of Galaxies”, 2018, ApJ, 858, 45M
90. McKinley, B., et al.; “The jet/wind outflow in Centaurus A: a local laboratory for AGN feedback”, 2018, MNRAS, 474, 4056

89. Schrabback, T., et al.; “Cluster mass calibration at high redshift: HST weak lensing analysis of 13 distant galaxy clusters from the South Pole Telescope Sunyaev-Zel’dovich Survey”, 2018, MNRAS, 474, 2635
88. Gaspari, M., **McDonald, M.**, et al.; “Shaken Snow Globes: Kinematic Tracers of the Multiphase Condensation Cascade in Massive Galaxies, Groups, and Clusters”, 2018, ApJ, 854, 167G
87. Russell, H. R., et al.; “Close entrainment of massive molecular gas flows by radio bubbles in the central galaxy of Abell 1795” 2017, MNRAS, 472, 4024
86. Hogan, M. T., et al.; “The Onset of Thermally Unstable Cooling from the Hot Atmospheres of Giant Galaxies in Clusters - Constraints on Feedback Models” 2017, ApJ, 851, 66H
85. Vantyghem, A. N., et al.; “A ^{13}CO Detection in a Brightest Cluster Galaxy”, 2017, ApJ, 848, 101
84. Saro, A., et al.; “Optical-SZE scaling relations for DES optically selected clusters within the SPT-SZ Survey” 2017, MNRAS, 468, 3347
83. Oullette, N. Q., et al.; “The Spectroscopy and H-band Imaging of Virgo Cluster Galaxies (SHIVir) Survey: Scaling Relations and the Stellar-to-total Mass Relation” 2017, ApJ, 843, 74
82. **McDonald, M.**, et al.; “The Remarkable Similarity of Massive Galaxy Clusters From $z \sim 0$ to $z \sim 1.9$ ” 2017, ApJ, 843, 28M
81. Hennig, C., et al.; “Galaxy Populations in Massive Galaxy Clusters to $z=1.1$: Color Distribution, Concentration, Halo Occupation Number and Red Sequence Fraction” 2017, MNRAS, 467, 4015
80. Noble, A. G.; **McDonald, M.**, et al.; “ALMA Observations of Gas-rich Galaxies in $z \sim 1.6$ Galaxy Clusters: Evidence for Higher Gas Fractions in High-density Environments” 2017, ApJ, 842, 21
79. Gupta, N., et al.; “High Frequency Cluster Radio Galaxies: Luminosity Functions and Implications for SZE Selected Cluster Samples” 2017, MNRAS, 467, 3737
78. Nurgaliev, D., **McDonald, M.**, et al.; “Testing for X-ray-SZ Differences and Redshift Evolution in the X-ray Morphology of Galaxy Clusters” 2017, ApJ, 841, 5
77. Schechter, P. L., et al.; “First lensed quasar system(s) from the VST-ATLAS survey: one quad and three nearly identical pairs” 2017, ApJ, 153, 219
76. Mittal, R., **McDonald, M.**, Whelan, J. T., Bruzual, G. “The challenging task of determining star formation rates: the case of a massive stellar burst in the brightest cluster galaxy of Phoenix galaxy cluster” 2017, MNRAS, 465, 3143M
75. Flender, S., Nagai, D., **McDonald, M.**; “Constraints on the optical depth of galaxy groups and clusters” 2017, ApJ, 837, 124F
74. Bayliss, M. B., et al.; “Velocity Segregation and Systematic Biases In Velocity Dispersion Estimates With the SPT-GMOS Spectroscopic Survey” 2017, ApJ, 837, 88B
73. Russell, H. R., **McDonald, M.**, et al.; “ALMA observations of massive molecular gas filaments encasing radio bubbles in the Phoenix cluster” 2017, ApJ, 836, 130R

72. Ma, J., et al.; “SPT0346-52: Negligible AGN Activity in a Compact, Hyperstarburst Galaxy at $z = 5.7$ ” 2016, ApJ, 832, 114
71. Bayliss, M. B., et al.; “SPT-GMOS: A Gemini/GMOS-South Spectroscopic Survey of Galaxy Clusters in the SPT-SZ Survey” 2016, ApJS, 227, 3
70. de Haan, T., et al.; “Cosmological Constraints from Galaxy Clusters in the 2500 Square-degree SPT-SZ Survey” 2016, ApJ, 832, 95
69. Zenteno, A., et al.; “Galaxy populations in the 26 most massive galaxy clusters in the South Pole Telescope SPT-SZ survey” 2016, MNRAS, 462, 830
68. Franse, J., et al.; “Radial Profile of the 3.5 keV Line Out to R200 in the Perseus Cluster” 2016, ApJ, 829, 124
67. Soergel, B., et al.; “Detection of the kinematic Sunyaev-Zel’dovich effect with DES Year 1 and SPT” 2016, MNRAS, 461, 3172
66. **McDonald, M.**, et al.; “The Evolution of the Intracluster Medium Metallicity in Sunyaev Zel’dovich-selected Galaxy Clusters at $0 < z < 1.5$ ” 2016, ApJ, 826, 124
65. Nicholl, M., et al.; “SN 2015BN: A Detailed Multi-wavelength View of a Nearby Superluminous Supernova” 2016, ApJ, 826, 39
64. Tremblay, G. R., et al.; “Cold, clumpy accretion onto an active supermassive black hole” 2016, Nature, 534, 218
63. Chiu, I., et al.; “Detection of enhancement in number densities of background galaxies due to magnification by massive galaxy clusters” 2016, MNRAS, 457, 3050
62. Lee, J. C., et al.; “A Deeper Look at Faint H α Emission in Nearby Dwarf Galaxies” 2016, ApJ, 817, 177
61. Brodwin, M., **McDonald, M.**, et al.; “IDCS J1426.5+3508: The Most Massive Galaxy Cluster at $z > 1.5$ ” 2016, ApJ, 817, 122
60. **McDonald, M.**, et al.; “Star-forming Brightest Cluster Galaxies at $0.25 < z < 1.25$: A Transitioning Fuel Supply” 2016, ApJ, 817, 86
59. Chiu, I., et al.; “Baryon content of massive galaxy clusters at $0.57 < z < 1.33$ ” 2016, MNRAS, 455, 258
58. Saro, A., et al.; “Constraints on the richness-mass relation and the optical-SZE positional offset distribution for SZE-selected clusters” 2015, MNRAS, 454, 2305
57. **McDonald, M.**, et al.; “Deep Chandra, HST-COS, and Megacam Observations of the Phoenix Cluster: Extreme Star Formation and AGN Feedback on Hundred Kiloparsec Scales” 2015, ApJ, 811, 111
56. Tremblay, G. R., et al.; “Far-ultraviolet morphology of star-forming filaments in cool core brightest cluster galaxies” 2015, MNRAS, 451, 3768
55. Baxter, E. J., et al.; “A Measurement of Gravitational Lensing of the Cosmic Microwave Background by Galaxy Clusters Using Data from the South Pole Telescope” 2015, ApJ, 806, 247
54. Brodwin, M., et al.; “The Massive and Distant Clusters of WISE Survey. III. Sunyaev-Zel’dovich Masses of Galaxy Clusters at $z \sim 1$ ” 2015, ApJ, 806, 26

53. Hlavacek-Larrondo, J., et al.; “X-Ray Cavities in a Sample of 83 SPT-selected Clusters of Galaxies: Tracing the Evolution of AGN Feedback in Clusters of Galaxies out to $z=1.2$ ” 2015, ApJ, 805, 35
52. **McDonald, M.**, et al.; “Extended, Dusty Star Formation Fueled by a Residual Cooling Flow in the Cluster of Galaxies Sersic 159-03” 2015, ApJ, 804, 16
51. Liu, J., et al.; “Analysis of Sunyaev-Zel’dovich effect mass-observable relations using South Pole Telescope observations of an X-ray selected sample of low-mass galaxy clusters and groups” 2015, MNRAS, 448, 2085
50. Voit, G. M., et al.; “Regulation of star formation in giant galaxies by precipitation, feedback and conduction” 2015, Nature, 519, 203
49. Lin, H. W., et al.; “Cool Core Bias in Sunyaev-Zel’dovich Galaxy Cluster Surveys” 2015, ApJ, 802, 34
48. McKinley, B., et al.; “Modelling of the spectral energy distribution of Fornax A: leptonic and hadronic production of high-energy emission from the radio lobes” 2015, MNRAS, 446, 3478
47. Bleem, L. E., et al.; “Galaxy Clusters Discovered via the Sunyaev-Zel’dovich Effect in the 2500-Square-Degree SPT-SZ Survey” 2015, ApJS, 216, 27
46. Shan, Y., **McDonald, M.**, & Courteau, S.; “Revised Mass-to-light Ratios for Nearby Galaxy Groups and Clusters” 2015, ApJ, 800, 122
45. Bocquet, S., et al.; “Mass Calibration and Cosmological Analysis of the SPT-SZ Galaxy Cluster Sample Using Velocity Dispersion σ_V and X-Ray Y_X Measurements” 2015, ApJ, 799, 214
44. Ehlert, S., et al.; “A Very Deep Chandra Observation of A1795: The Cold Front and Cooling Wake” 2015, ApJ, 799, 174
43. Saliwanchik, B. R., et al.; “Measurement of Galaxy Cluster Integrated Comptonization and Mass Scaling Relations with the South Pole Telescope” 2015, ApJ, 799, 37S
42. **McDonald, M.**, et al.; “The Redshift Evolution of the Mean Temperature, Pressure, and Entropy Profiles in 80 SPT-Selected Galaxy Clusters” 2014, ApJ, 794, 67
41. Bayliss, M. B., et al.; “SPT-CL J2040-4451: An SZ-selected Galaxy Cluster at $z = 1.478$ with Significant Ongoing Star Formation” 2014, ApJ, 794, 12
40. Ruel, J., et al.; “Optical Spectroscopy and Velocity Dispersions of Galaxy Clusters from the SPT-SZ Survey” 2014, ApJ, 792, 45
39. **McDonald, M.**, et al.; “HST-COS Spectroscopy of the Cooling Flow in A1795 – Evidence for Inefficient Star Formation in Condensing Intracluster Gas” 2014, ApJL, 791, L30
38. Benson, B. A., et al.; “SPT-3G: a next-generation cosmic microwave background polarization experiment on the South Pole telescope” 2014, SPIE, 9153, 91531P
37. Saro, A., et al.; “Constraints on the CMB temperature evolution using multiband measurements of the Sunyaev-Zel’dovich effect with the South Pole Telescope” 2014, MNRAS, 440, 2610

36. Sick, J., et al.; “Andromeda (M31) Optical and Infrared Disk Survey. I. Insights in Wide-field Near-IR Surface Photometry” 2014, *AJ*, 147, 109
35. **McDonald, M.**, et al.; “The State of the Warm and Cold Gas in the Extreme Starburst at the Core of the Phoenix Galaxy Cluster (SPT-CLJ2344-4243)” 2014, *ApJ*, 784, 18
34. Nurgaliev, D., et al.; “A Robust Quantification of Galaxy Cluster Morphology Using Asymmetry and Central Concentration” 2013, *ApJ*, 779, 112
33. Zastrow, J., et al.; “New Constraints on the Escape of Ionizing Photons from Starburst Galaxies Using Ionization-parameter Mapping” 2013, *ApJ*, 779, 76
32. **McDonald, M.**, et al.; “The Growth of Cool Cores and Evolution of Cooling Properties in a Sample of 83 Galaxy Clusters at $0.3 < z < 1.2$ Selected from the SPT-SZ Survey” 2013, *ApJ*, 774, 23
31. Blanchard, P. K., et al.; “Searching for Cooling Signatures in Strong Lensing Galaxy Clusters: Evidence Against Baryons Shaping the Matter Distribution in Cluster Cores” 2013, *ApJ*, 772, 24
30. **McDonald, M.**, et al.; “An HST/WFC3-UVIS View of the Starburst in the Cool Core of the Phoenix Cluster” 2013, *ApJL*, 765, L37
29. Benson, B. A., et al.; “Cosmological Constraints from Sunyaev-Zel’dovich-selected Clusters with X-Ray Observations in the First 178 deg² SUP_z/SUP_z of the South Pole Telescope Survey” 2013, *ApJ*, 763, 147
28. Reichardt, C. L., et al.; “Galaxy Clusters Discovered via the Sunyaev-Zel’dovich Effect in the First 720 Square Degrees of the South Pole Telescope Survey” 2013, *ApJ*, 763, 127
27. Stalder, B., et al.; “SPT-CL J0205-5829: A $z = 1.32$ Evolved Massive Galaxy Cluster in the South Pole Telescope Sunyaev-Zel’dovich Effect Survey” 2013, *ApJ*, 763, 93
26. Kuzio de Naray, R., et al.; “Searching for non-axisymmetries in NGC 6503: a weak end-on bar” 2012, *MNRAS*, 427, 2523
25. Semler, D. R., et al.; “High-redshift Cool-core Galaxy Clusters Detected via the Sunyaev-Zel’dovich Effect in the South Pole Telescope Survey” 2012, *ApJ*, 761, 183
24. Song, J., et al.; “Redshifts, Sample Purity, and BCG Positions for the Galaxy Cluster Catalog from the First 720 Square Degrees of the South Pole Telescope Survey” 2012, *ApJ*, 761, 22
23. Hall, M., et al.; “An investigation of Sloan Digital Sky Survey imaging data and multiband scaling relations of spiral galaxies” 2012, *MNRAS*, 425, 2741
22. High, F. W., et al.; “Weak-lensing Mass Measurements of Five Galaxy Clusters in the South Pole Telescope Survey Using Magellan/Megacam” 2012, *ApJ*, 758, 68
21. Roediger, J. C., et al.; “Stellar Populations and Radial Migrations in Virgo Disk Galaxies” 2012, *ApJ*, 758, 41
20. **McDonald, M.**, et al.; “A massive, cooling-flow-induced starburst in the core of a luminous cluster of galaxies” 2012, *Nature*, 488, 349

19. **McDonald, M.**, Wei, L. H., & Veilleux, S.; “Cold Molecular Gas along the Cooling X-Ray Filament in A1795” 2012, ApJL, 755, L24
18. **McDonald, M.**, Veilleux, S., & Rupke, D. S. N.; “Optical Spectroscopy of H α ; Filaments in Cool Core Clusters: Kinematics, Reddening, and Sources of Ionization” 2012, ApJ, 746, 153
17. **McDonald, M.**; “Optical Line Emission in Brightest Cluster Galaxies at $0 < z < 0.6$: Evidence for a Lack of Strong Cool Cores 3.5 Gyr Ago?” 2011, ApJL, 742, L35
16. Zastrow, J., et al.; “An Ionization Cone in the Dwarf Starburst Galaxy NGC 5253” 2011, ApJL, 741, L17
15. Roediger, J. C., et al.; “The formation and evolution of Virgo cluster galaxies - II. Stellar populations” 2011, MNRAS, 416, 1996
14. Roediger, J. C., et al.; “The formation and evolution of Virgo cluster galaxies - I. Broad-band optical and infrared colours” 2011, MNRAS, 416, 1983
13. Courteau, S., et al.; “The Luminosity Profile and Structural Parameters of the Andromeda Galaxy” 2011, ApJ, 739, 20
12. Blanton, E. L., et al.; “A Very Deep Chandra Observation of A2052: Bubbles, Shocks, and Sloshing” 2011, ApJ, 737, 99
11. **McDonald, M.**, et al.; “A survey of 286 Virgo cluster galaxies at optical griz and near-IR H band: surface brightness profiles and bulge-disc decompositions” 2011, MNRAS, 414, 2055
10. **McDonald, M.**, et al.; “Star Formation Efficiency in the Cool Cores of Galaxy Clusters” 2011, ApJ, 734, 95
9. **McDonald, M.**, Veilleux, S., & Mushotzky, R.; “The Effect of Environment on the Formation of H α ; Filaments and Cool Cores in Galaxy Groups and Clusters” 2011, ApJ, 731, 33
8. Prochaska Chamberlain, L. C., et al.; “Stellar population trends in S0 galaxies” 2011, MNRAS, 412, 423
7. **McDonald, M.**, et al.; “On the Origin of the Extended H α ; Filaments in Cooling Flow Clusters” 2010, ApJ, 721, 1262
6. MacArthur, L. A., et al.; “Integrated Stellar Populations: Confronting Photometry with Spectroscopy” 2010, ApJ, 718, 768
5. Veilleux, S., et al.; “MMTF: The Maryland-Magellan Tunable Filter” 2010, AJ, 139, 145
4. **McDonald, M.**, & Veilleux, S.; “MMTF-H α ; and HST-FUV Imaging of the Filamentary Complex in ABELL 1795” 2009, ApJL, 703, L172
3. **McDonald, M.**, Courteau, S., & Tully, R. B.; “The near-IR luminosity function and bimodal surface brightness distributions of Virgo cluster galaxies” 2009, MNRAS, 394, 2022
2. **McDonald, M.**, Courteau, S., & Tully, R. B.; “Bulge-disc decompositions and structural bimodality of Ursa Major cluster spiral galaxies” 2009, MNRAS, 393, 628
1. Courteau, S., et al.; “The Bulge-Halo Connection in Galaxies: A Physical Interpretation of the $V_C - \sigma_0$ Relation” 2007, ApJL, 655, L21

SUBMITTED OR
NON-REFEREED
PUBLICATIONS

8. Ruppin F., **McDonald M.**, et al.; “Stability of Cool Cores During Galaxy Cluster Growth: A Joint *Chandra*/SPT Analysis of 67 Galaxy Clusters Along a Common Evolutionary Track Spanning 9 Gyr”, 2020, arXiv, arXiv:2012.14669
7. Schrabback T., et al.; “Mass calibration of distant SPT galaxy clusters through expanded weak lensing follow-up observations with HST, VLT & Gemini-South”, 2020, arXiv, arXiv:2009.07591
6. Tremblay G., et al.; “[2020 Decadal White Paper] Galaxy Winds in the Age of Hyperdimensional Astrophysics”, 2019, BAAS, 51,480
5. Ruszkowski M., et al.; “[2020 Decadal White Paper] Supermassive Black Hole Feedback”, 2019, BAAS, 51,326
4. Mantz A., et al.; “[2020 Decadal White Paper] The Future Landscape of High-Redshift Galaxy Cluster Science”, 2019, BAAS, 51,279
3. Walker S., et al.; “[2020 Decadal White Paper] Unveiling the Galaxy Cluster - Cosmic Web Connection with X-ray observations in the Next Decade”, 2019, BAAS, 51,218
2. Voit G. M., et al.; “[2020 Decadal White Paper] Circumgalactic Gas and the Precipitation Limit”, 2019, arXiv, arXiv:1903.11212
1. Ray P. S., et al.; “STROBE-X: X-ray Timing and Spectroscopy on Dynamical Timescales from Microseconds to Years”, 2019, arXiv, arXiv:1903.03035

INVITED TALKS
(COLLOQUIA &
SEMINARS)

- Stanford University, Colloquium **May 2021**
“*Understanding the Limitations and Evolution of SMBH Feedback in Massive Galaxies*”
- University of Chicago, Colloquium **Apr 2021**
“*Understanding the Limitations and Evolution of SMBH Feedback in Massive Galaxies*”
- University of California Berkeley, Colloquium **Apr 2021**
“*Understanding the Limitations and Evolution of SMBH Feedback in Massive Galaxies*”
- University of Michigan, High Energy Physics Seminar **Mar 2021**
“*Understanding the Limitations and Evolution of SMBH Feedback in Massive Galaxies*”
- Cambridge University, Institute of Astronomy, Galaxies Seminar **Mar 2021**
“*Understanding the Limitations and Evolution of SMBH Feedback in Massive Galaxies*”
- University of Waterloo, Astro Seminar **Oct 2020**
“*Galaxy Cluster Evolution Over the Past 10 Billion Years*”
- Joint Astronomy Colloquium, Munich **Jun 2019**
“*Galaxy Cluster Evolution Over the Past 10 Billion Years*”
- Carnegie Observatories, Colloquium **Oct 2018**
“*Galaxy Cluster Evolution Over the Past 10 Billion Years*”
- University of Toronto, Colloquium **Sep 2018**
“*Galaxy Cluster Evolution Over the Past 10 Billion Years*”
- York University, Colloquium **Sep 2018**
“*Galaxy Cluster Evolution Over the Past 10 Billion Years*”
- St. Mary’s University, Colloquium **Feb 2018**
“*Galaxy Cluster Evolution Over the Past 10 Billion Years*”
- IASF Milano / INAF, Colloquium **Jan 2018**
“*Galaxy Cluster Evolution Over the Past 10 Billion Years*”
- Harvard-Smithsonian Center for Astrophysics, Colloquium **Nov 2017**
“*Galaxy Cluster Evolution Over the Past 10 Billion Years*”
- Harvard-Smithsonian Center for Astrophysics, ITC Lunch Talk **Nov 2017**
“*Witnessing the Stripping of Hot Halos as Galaxies Fall into Clusters*”

- Cambridge University / IoA, Colloquium **Nov 2017**
“Galaxy Cluster Evolution Over the Past 10 Billion Years”
- Princeton University, Colloquium **Mar 2017**
“Galaxy Cluster Evolution Over the Past 10 Billion Years”
- McGill University, MSI Seminar **Nov 2016**
“Galaxy Cluster Evolution Over the Past 10 Billion Years”
- University of Montreal, Astronomy Seminar **Nov 2016**
“Galaxy Cluster Evolution Over the Past 10 Billion Years”
- University of Montreal, Colloquium **Nov 2016**
“The Phoenix Cluster 4 years later: New Insights into Galaxy Evolution”
- University of Massachusetts Amherst, Colloquium **Sep 2016**
“Galaxy Cluster Evolution Over the Past 10 Billion Years”
- University of Maryland Astrophysics, Colloquium **Mar 2016**
“Galaxy Cluster Evolution Over the Past 10 Billion Years”
- Harvard-Smithsonian Center for Astrophysics, LS Seminar **Jan 2016**
“Galaxy Cluster Evolution Over the Past 10 Billion Years”
- Georgia-Tech University, Astronomy Seminar **Jan 2016**
“Galaxy Cluster Evolution Over the Past 10 Billion Years”
- Yale Center for Astronomy & Astrophysics, Seminar **Jan 2016**
“Galaxy Cluster Evolution Over the Past 10 Billion Years”
- Goddard Space Flight Center Astrophysics, Colloquium **Nov 2015**
“Probing the Evolution of Galaxy clusters from $z \sim 2$ to $z \sim 0$ with the SPT”
- MIT Astrophysics, Colloquium **Feb 2015**
“How Star Formation is regulated in the Cores of Galaxy Clusters”
- Michigan State University Astrophysics, Seminar **Mar 2014**
“New Insights into Galaxy Cluster Evolution from the South Pole Telescope”
- MIT Astrophysics, Colloquium **Feb 2014**
“New Insights into Galaxy Cluster Evolution from the South Pole Telescope”
- UC Berkeley Space Science Laboratory, Colloquium **Oct 2013**
“The Evolution of Galaxy Clusters Since $z \sim 1$ from the South Pole Telescope”
- Stanford Astrophysics, Colloquium **Oct 2013**
“The Evolution of Galaxy Clusters Since $z \sim 1$ from the South Pole Telescope”
- Carnegie-Mellon, Astronomy Seminar **Oct 2013**
“The Evolution of Galaxy Clusters Since $z \sim 1$ from the South Pole Telescope”
- Queen’s University, Astronomy Seminar **Sep 2013**
“The Evolution of Galaxy Clusters Since $z \sim 1$ from the South Pole Telescope”
- Harvard-Smithsonian Center for Astrophysics, HEAD Lunch Talk **Aug 2013**
“The Growth of Cool Cores in Galaxy Clusters Since $z \sim 1$ ”
- Harvard-Smithsonian Center for Astrophysics, ITC Lunch Talk **Feb 2013**
“Evidence for Shock Heating of the Warm Gas Filaments in Cool Core Clusters”
- Harvard-Smithsonian Center for Astrophysics, Colloquium **Feb 2013**
“The Phoenix Cluster: A New Lease on Life for Cooling Flows”
- Harvard-Smithsonian Center for Astrophysics, Optical-IR Seminar **Apr 2012**
“Understanding the Origin and Evolution of Emission Line Nebulae in Cool Core Clusters”
- GSFC/UMD/NRL Monthly Clusters Meeting **May 2011**
“Long slit spectroscopy of optically-emitting filaments in cool core clusters”
- Massachusetts Institute of Technology, HETG Group Meeting Talk **Dec 2010**
“On the origins of H α filaments in the cores of galaxy groups and clusters”
- Harvard-Smithsonian Center for Astrophysics, HEAD Lunch Talk **Dec 2010**
“On the origins and heating source of the H α filaments in cooling flow clusters”
- Goddard Space Flight Center, Stellar and Extragalactic Lunch Seminar **Nov 2010**
“Star formation and ionized filaments in cooling flow BCGs”
- Space Telescope Science Institute, Seminar **Nov 2010**

	• <i>“Star formation and ionized filaments in cooling flow BCGs”</i>	
	• UC Berkeley, Theoretical Astrophysics Center Seminar	Sep 2010
	• <i>“The origin of the Hα filaments in galaxy groups and clusters”</i>	
	• Queen’s University Astronomy Seminar	Mar 2010
	• <i>“A multi-wavelength study of galaxy groups and clusters using the MMTF”</i>	
INVITED AND CONTRIBUTED TALKS (CONFERENCES)	• Galaxy Cluster Formation (GCF2021)	June 2021
	• <i>“Probing Cluster Evolution Over the Past 10 Gyr via SZ+X-ray Surveys”</i>	
	• Athena-LSST Synergy Meeting	Apr 2021
	• <i>“Cluster Astrophysics with Athena and the Rubin Observatory”</i>	
	• Joint eRosita-SPT Planning Meeting	Oct 2020
	• <i>“X-ray+SZ Photometric Redshifts with SPT+eRosita”</i>	
	• Cosmology with CMB-S4	Aug 2020
	• <i>“Astrophysics of High-z Galaxy Clusters”</i>	
	• 36th Annual IAP “Colloque de l’IAP”	June 2020
	• <i>“How the ICM has Evolved Over the Past 10 Billion Years”</i>	
	• Multiphase AGN Feeding & Feedback, Sesto Italy	July 2020
	• <i>“Enhanced Black Hole Accretion in the Most Massive Galaxies”</i>	
	• <i>(Canceled due to COVID-19 Pandemic)</i>	
	• SPT-eRosita Synergy Meeting, Garching Germany	Mar 2020
	• <i>“Photometric Redshifts Using the Combination of eRosita and SPT Data”</i>	
	• <i>(Canceled due to COVID-19 Pandemic)</i>	
	• Celebrating 20 Years of Chandra	Dec 2019
	• <i>“10 Years of Chandra and the South Pole Telescope”</i>	
	• Tracing Cosmic Evolution with Clusters of Galaxies	Jul 2019
	• <i>“Pure Cooling in the Phoenix Cluster”</i>	
	• Physics of the ICM: Theory and Computation, Budapest Hungary	Feb 2019
	• <i>“Exploring the Limits of AGN feedback in Cool Core Clusters”</i>	
	• ICM Physics and Modeling, Munich Germany	Oct 2018
	• <i>“The Evolution of Cool Cores, Thermodynamic Profiles, and Metallicity of the ICM”</i>	
	• Multiphase AGN Feeding & Feedback, Sesto Italy	Jul 2018
	• <i>“Quasar Feedback and Cooling Flows in Galaxy Clusters”</i>	
	• Athena Science Working Group Meeting, Sesto Italy	Jan 2018
	• <i>“Preparing for Athena with the SPT-Chandra High-z Cluster Surveys”</i>	
	• STROBE-X Working Group Meeting, Lubbock TX	Sep 2017
	• <i>“General Problems in Diffuse Emission with STROBE-X”</i>	
	• From Chandra to Lynx, Boston MA	Aug 2017
	• <i>“Observing the First Galaxy Clusters with Lynx”</i>	
	• Galaxy Clusters 2017, Santander Spain	Jul 2017
	• <i>“The Evolution of Massive Galaxy Clusters Over the Past 10 Billion Years”</i>	
	• CASCA 2017, Edmonton Canada	May 2017
	• <i>“The Evolution of Galaxy Clusters Over the Past 10 Gyr”</i>	
	• Physics of the Intracluster Medium, Beijing China	Apr 2017
	• <i>“The Evolution of the ICM in SZ-Selected Clusters Over the Past 10 Billion Years”</i>	
	• The Remarkable Life of a BCG, Sesto Italy	Feb 2017
	• <i>“Star Formation in High-z BCGs: A transitioning Fuel Supply?”</i>	
	• Galaxy clusters: physics labs and cosmological probes, Cambridge UK	Dec 2016
	• <i>“The Evolution of Cool Cores Over the Past 10 billion Years”</i>	
	• Physics of SMBH Formation and Feedback, Annapolis MD	Oct 2015
	• <i>“The Evolution of the Cooling-Feedback Balance in Galaxy Clusters...”</i>	
	• XXIV IAU General Assembly, Honolulu Hawaii	Aug 2015
	• <i>“Probing the Evolution of the Hot ICM with Joint X-ray-SZ Surveys”</i>	
	• SnowCLUSTER 2015, Snowbird UT	Apr 2015
	• <i>“Probing Galaxy Cluster Evolution with Combined X-ray + SZ Surveys”</i>	

- 2015 Hubble Fellows Symposium, Baltimore MD **Mar 2015**
“The Phoenix Cluster: Cooling and Feedback in Action”
- 15 Years of Chandra, Boston MA **Nov 2014**
“Understanding the Evolving Balance Between ICM Cooling and AGN Feedback”
- The Life and Times of Galaxies, Zion UT **Sep 2014**
“The Evolution of the Intracluster Medium Over the Past ~ 8 Gyr”
- The X-ray Universe 2014, Dublin Ireland **Jun 2014**
“New Constraints on Galaxy Cluster Evolution from the South Pole Telescope”
- Future Directions in Galaxy Cluster Surveys, Paris France **Jun 2014**
“Understanding the Evolving Balance Between ICM Cooling and AGN Feedback”
- 2014 Hubble Fellows Symposium, Baltimore MD **Mar 2014**
“New Insights into Galaxy Cluster Evolution from the South Pole Telescope”
- Tracing Cosmic Evolution with Clusters of Galaxies, Sesto Italy **Jul 2013**
“The Evolution of Cool Cores & ICM Cooling from $z = 0$ to $z = 1.2$ ”
- 2013 Hubble Fellows Symposium, Baltimore MD **Mar 2013**
“The Phoenix Cluster: A New Lease on Life for Cooling Flows”
- Growing up at High- z : From Proto-Clusters to Clusters, Madrid Spain **Sep 2012**
“The Properties of Cool Cores in Galaxy Clusters at $z > 0.5$ ”
- XXVIII IAU General Assembly, Beijing China **Aug 2012**
“The Evolution of the Feedback/Cooling Balance in Galaxy Cluster Cores ”
- XXVIII IAU General Assembly, Beijing China **Aug 2012**
“A Cooling-Flow Induced Starburst in the Core of a $z = 0.6$ Galaxy Cluster”
- Energetic Astronomy: Richard Mushotzky at 65, Annapolis MD **Jun 2012**
“The Evolution of the Heating/Cooling Balance in Galaxy Cluster Cores ”
- American Astronomical Society Winter Meeting, Austin TX **Jan 2012**
“The Redshift Evolution of Optically-Emitting BCGs: An Indirect Probe of Cool Core Evolution?”
- 12th Meeting of the AAS High Energy Division, Newport RI **Sep 2011**
“The Origin of Optical Filaments in Cool Core Galaxy Clusters”
- 2011 Chandra Science Workshop **Jul 2011**
“The Origins and Ionization Mechanisms of Warm Filaments in Cool Core Clusters”
- American Astronomical Society Winter Meeting, Seattle WA **Jan 2011**
“The Origins of $H\alpha$ Emission in the Cool Cores of Galaxy Groups and Clusters”
- UC Santa Cruz Workshop on Galaxy Formation **Aug 2010**
“A Multi-Wavelength Study of BCGs in Cooling Flow Clusters with the MMTF”
- American Astronomical Society Winter Meeting, Washington DC **Jan 2010**
“A Multi-Wavelength Study of Galaxy Clusters using the MMTF”